

# Tips for Better Photographs

by  
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## Foreword

**This little booklet came about for at least two reasons. First of all, I need this information myself, and secondly, I was asked to prepare a guide for use by others.**

**We are not professional photographers, and we probably never will be. However, we can take better pictures. From the courses I've taken and the books I've read, I've learned that there are a few basics:**

- 1) Know your camera**
- 2) Be aware of light**
- 3) Understand the capabilities of film**

**From that point on, good photography is an awareness of what is going on around you, how that is viewed through the camera, and experience.**

**The purpose of this booklet is to enumerate the basics, to give a few general hints, and to make all of us aware of the thinking process needed to compose a good photo. After that comes practice.**

**I've used examples of my own photography, not because they are good examples, but because this is a learning tool. You could do the same. By becoming more aware of what good photos should be, you can more easily identify the mistakes you have made. Our photos should become better as we REMEMBER what we did and understand how we can improve.**

**Ready, set, SHOOT!**



# Camera Care:

Cameras require and deserve the consideration due any piece of precision equipment.

1. Keep them dust free
2. Protect against shocks
3. Shield from direct sun
4. Keep them out of hot places
5. Keep them dry

AND, MOST IMPORTANT — Keep the user's manual with the camera.

## Holding the Camera

The first step in getting a good picture is holding the camera correctly.

Support the weight of the camera in your left hand.

You steady the camera and push the shutter release button with your right hand.

Keep the elbows close to the body for support.



Wrong way



Correct way to hold the camera

## What is a good picture?

A good picture is one that helps bring out the point of a story. Strive for clarity, meaning, and content to enhance the story.

# What Makes a USABLE Picture?

## A usable picture:

1. Tells a story (eliminate everything that doesn't relate to the object or action of the picture.)

*If you knew this shot was taken in Yellowstone National Park, could this be anything other than Old Faithful erupting?*



2. Is easy to understand (get close enough to your subject to show it clearly and eliminate unnecessary details.)



Too far away to determine the subject.



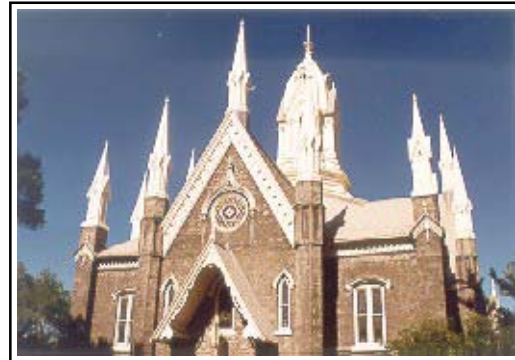
Now, that's an elk!

We need to keep this rule in mind. Quite frequently amateur photographers do not fill the frame with the central subject. It is important to fill the frame with the subject matter, not unnecessary details.



3. Has a minimum of “dead” space  
(eliminate any non-story-telling dead space).

*I wanted a picture of these beautiful temple spirals. If I had backed up and gotten the entire building, I would have gotten dead space.*



4. Is not cluttered with unnecessary or distracting items.

*The tree is definitely clutter! I should have checked for a more appealing angle.*



5. Has “lead-in” lines rather than  
“blocking” lines.



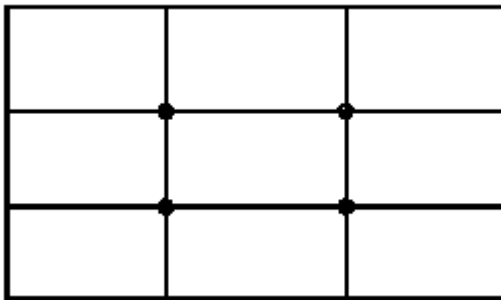
*Leading lines are more appealing than blocking lines.*



*Same bridge, but blocking lines.*

6. Is not “dead-centered”.

*Think in terms of “thirds”. Divide the frame in thirds both horizontally and vertically. Place the subject on an intersection point, not dead center of the frame.*



## PEOPLE PICTURES: Helpful Hints

—Don’t let subjects look directly into the camera.

*It’s difficult to get good shots without having the subjects look posed. One way to get good photos is to snap shots while the subjects are working. Keep your eye open for the ideal time to shoot.*



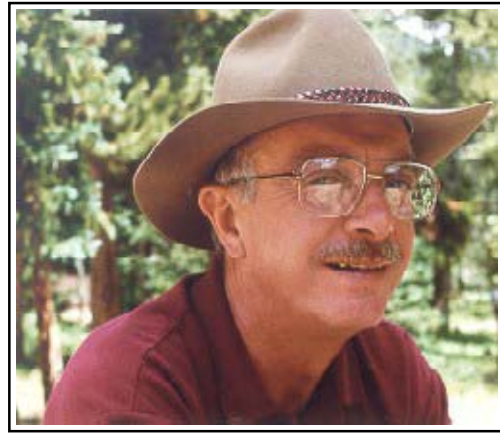
—Have models looking and moving toward the main point of interest.

—Put people with dark hair, skin, or clothing against light background. Put people with light colored hair, clothing, and skin against dark backgrounds.



*I should have asked the subject to tilt the hat, looked for another angle, or used fill-in flash to avoid the hat shadow.*

—Avoid heavy shadows on faces by having models tip hats back .



*This is a better hat shot.*

—Use fill-in flash when shooting faces fairly close-up.

## Steps for MAKING Usable Photos

Years ago I recall hearing an old timer say, “Stand over here; I’m going to MAKE your picture.” At the time, I thought that was a strange term. I thought we TOOK pictures.

In reality, we do both TAKE and MAKE pictures. Pictures that record an event such as a vacation or a family gathering are often taken. We’re capturing something that we thought was a pretty scene or recording our child’s birthday party. We refer to these as record shots. They don’t have to be artistically done; they are just recording history.

However, pictures that are to be used in publications usually have to be made. Making a picture involves more than just using the equipment correctly. We have to THINK.

There are four components of a picture:

- Film
- Subject
- Lighting
- Camera

# FILM:

Step 1: Load the camera with the correct film for the occasion.

Do you want slides, color, or black and white prints? What speed film do you need? If it's a sunny day, 100 speed film is good. If the day is rather cloudy, you may need a little faster film, such as a 200 speed film. Keep in mind that fast film is not necessarily better. Extra speed is gained at the expense of grain. For the photos needed in soil surveys, 64 or 100 speed film is best. We will get a sharper picture with less grain.

Remember, film and developing is relatively inexpensive in terms of getting the right picture, if you consider the time and expense of travel to get that shot. Take several exposures to make sure you get the photo that you want.

# SUBJECT:

Step 2: THINK of what the photo is to say—what is the story here?

Step 3: THINK of props you may need to clarify the story.

*This is a photo taken in the Petrified Forest. Several years from now as we look back through our vacation pictures, do you think we would remember what this was if the person was just standing by the log? Maybe, and maybe not. But, the subject is pretending to chop the log. I'm sure this will help us recall the situation.*



Step 4: THINK of the people who should be in the picture, if any.

Step 5: THINK of the action, and how you can make it look natural in the picture.



# LIGHTING:

There are three basic lighting situations:

- 1) front lighting
- 2) side lighting
- 3) back lighting

Front lighting is the way most people were taught to take pictures. The rule here is to keep the sun behind you when shooting photos. While this approach is fine for many situations, it does have two disadvantages. First of all, if it is a “people picture”, your subject will be looking into the sun, and it might be hard for them not to squint. Second, front lighting tends to make a picture look “flat”, without much feeling of depth because there are little or no shadows in the picture.

A good way to add depth to a photo is to use side lighting. The resulting shadows can create an impression of three-dimensional depth to your photo.

Step 6: THINK lighting.



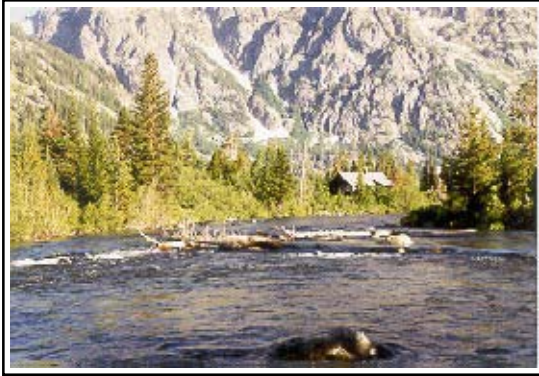
*This tree was shot with the sun behind my back. With no shadows, the tree appears to be flat.*



*This is the same tree, but it's shot with side lighting. The shadow on the left gives depth to the picture, and makes the tree appear more round than flat.*

# CAMERA

Step 7: THINK of the camera position. Look at the scene from different angles and determine what's best.



*Same river; different views from the camera. Which is better? In my opinion, the shot on the right is better. There is a leading line, there is a little sky, and the picture is framed better.*

Step 8: THINK of the exposure. Do you want minimum or maximum depth of field?  
Stopped motion?

Step 9: Adjust camera settings

Step 10: SHOOT! — Several exposures.

# CAMERA MECHANICS

**MOST IMPORTANT RULE:** Practice with the controls of your camera until their operation become almost automatic. This frees your mind to **THINK** about your pictures. The composition process should never become automatic.

**KNOW YOUR CAMERA**, inside and out. Study the instruction booklet to learn all of the camera's capabilities.

**A MEMORY AID:** You will be "S A D" if you forget to set:

## Shutter - Aperture - Distance

The "stream" of light coming through a lens could be compared to a stream of water coming out of a faucet.

A small faucet (aperture, in a camera) passes the same amount of water (light) as a large faucet - it just takes a little longer (see below).

Thus, many combinations of aperture/shutter-speed admit exactly the same amount of light to the film:

$1/30$  at  $f4 = 1/60$  at  $f2.8$

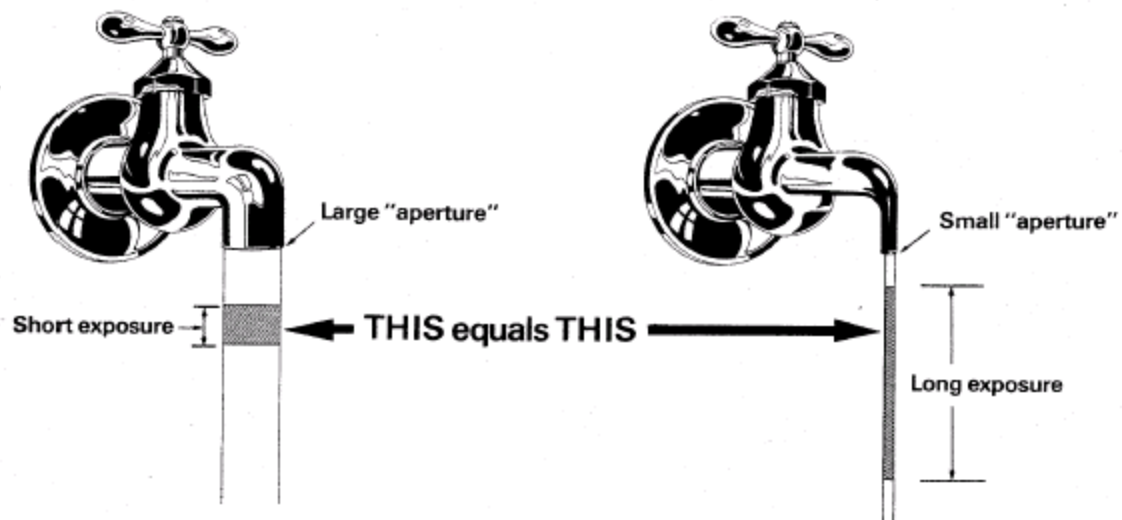
$1/30$  at  $5.6 = 1/60$  at  $f4 = 1/125$  at  $f2.8$

$1/30$  at  $f8 = 1/60$  at  $f5.6 = 1/125$  at  $f4 = 1/250$  at  $f2.8$

$1/30$  at  $11 = 1/60$  at  $f8 = 1/125$  at  $f5.6 = 1/250$  at  $f4 = 1/500$  at  $f2.8$

and so on.

It's the doubling and halving rule. If you go up on one scale, you must go down on the other.



# WHICH SHUTTER SPEED?

The general rule is: Use the fastest speed you can and still retain the aperture you need to get the picture.

Why this rule? It is difficult to hold the camera very still. The slightest jiggle of the camera can mean a lot of apparent subject movement. The faster shutter speed tends to dampen down this subject “movement” problem. Thus, when shooting distant objects where depth of field is not a factor, use the fastest shutter speed you have available.

# WHICH APERTURE (f-stop)?

The general rule is: Use the aperture that will give you the depth of field you desire. Determine which objects you want to have in focus.



*LARGE APERTURES mean shallow depth of field. This frame was shot at an aperture f8 for 1/125.*

Use wide aperture to blur out distracting backgrounds. Your subject, being the only thing in sharp focus, stands out clearly and becomes the immediate center of attention. This is most effective on close-ups, such as in taking pictures of flowers and in some cases people.

Depth of field increases as you make the aperture smaller.



*SMALLER APERTURES give greater depth of field. This frame was shot at an aperture of f16 for 1/30.*





# Digital Photography



Digital photography - film-less photographs – is a relatively new technology that allows for instant gratification, and instant adjustments. If you don't like what you see, take the shot again!

Digital photos are pictures made up of electronic data. Digital photography is based on pixels, or picture elements. Pixels are like tiny tiles that are arranged horizontally and vertically in a precise grid. The more pixels you have in the grid, the more finely detailed the picture will be.

## Image Quality

The quality of a digital camera's images is largely determined by **resolution**, which is measured in pixels. If you plan to take images that will primarily be viewed onscreen, such as PowerPoint presentations or added to a web page, a lower resolution (but no lower than 640 X 480) will be adequate.

Here are minimum resolution settings for high-quality prints. For requirements for published soil surveys, check the section dealing with manuscript specifications.

Digital Camera Resolution	Maximum recommended print size
640 x 480 (300,000 pixels)	3" x 5"
1,024 x 768 (800,000 pixels)	4" x 6"
1,280 x 980 (1,000,000 pixels)	5" x 7"
1,600 x 1,200 (2,000,000 pixels)	8" x 10"

## Taking Pictures

Taking pictures with a digital camera is a little different from a regular point-and-shoot camera. Not all digital cameras include an optical viewfinder to look through to frame your image. Most digital cameras offer an LCD (liquid crystal display) panel, a small screen on the camera itself. Users determine the composition of the photo by looking through this panel. **Important note:** If the majority of the photos you take are outdoors, a viewfinder is a must. Bright sunlight can make it difficult to compose the photo through the LCD.



Many digital cameras have built in flash and a zoom feature. Experiment with the flash. Sometimes the photo is better without the flash, even though the flash came on automatically. An example of this situation would be taking a picture of a picture that is behind glass. The

flash will reflect off the glass and cause a white spot in the photo. In most cases, you can turn the flash off.



The LCD panel is used to review shots after you have taken them. You can then decide to delete the photo, take another shot, or save the photo.

## Storage in the Camera

Although digital cameras don't use film, the camera still needs a way to store images. Many models come with built-in memory cards and some offer the option of purchasing additional removable memory.

Most digital cameras have more than one compression setting. When images are compressed, some details are lost. The more a photograph is compressed, the more noticeable this loss of detail will be. The compression option allows the user to control the trade-off between reduced memory requirements and loss of detail. You have the option to save images at higher compression (using less memory, some detail loss, but you can save more images) or lower compression (using more memory, less detail loss, but fewer images can be stored). Saving images in higher compression modes should be fine for most photos.

## Transfer to a Computer



Once the images are in the camera, you need a way to access them on the computer. This can be the most frustrating part of digital photography. Most digital cameras can be connected to the computer via a standard serial port. The camera will include software to transfer the images to the PC.

## Storage on Your Computer



If you store your photos on your hard drive, it is a good idea to create a directory just for digital photos. You might want to make sub-directories

to store photos of like description. You can store images on a disk or CD. Software is also available to help with the organization of photos.

**IMPORTANT SUGGESTION** – Most digital cameras come with a CD reference manual. Keep track of that CD and any hardcopy user's manual. You may be surprised at how many times you need to refer to this material.



# SOIL SURVEY PHOTOS

The following information was provided by Aaron Achen, Manuscript Editor.

## I'm Preparing a Soil Survey...

**Do not take a bunch of pictures and then decide where in the text to place them; decide where in the text you need illustrations and then take a bunch of pictures.**

*Should I use color film or black and white?*

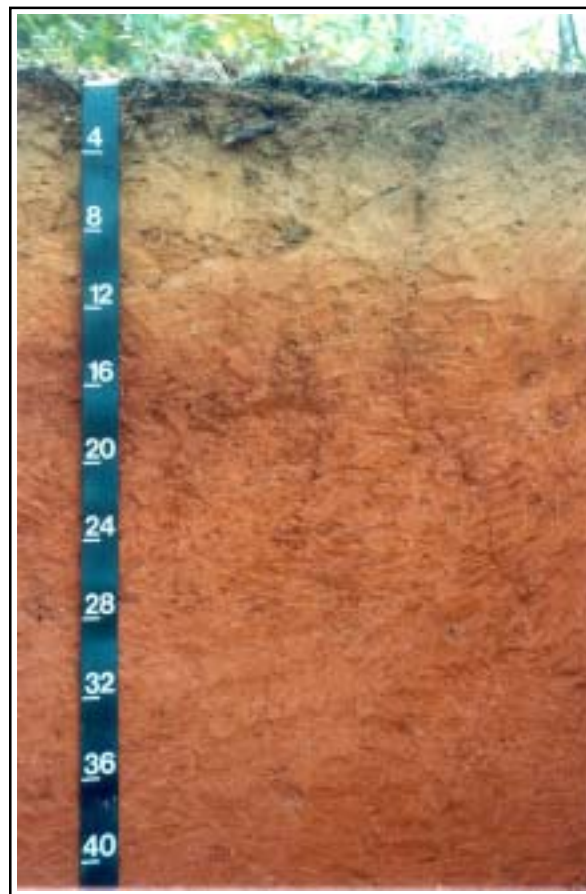
Use color slide film for all photos.

If fewer than 400 copies of the survey will be printed, contact the English editor to discuss options.

*What should I submit?*

*Submit the original slides and a 3.5" x 5" or 4" x 6" color print made from each slide.*

The prints are used for quality assurance, particularly for color matching of the soil profiles. It is important that you have the prints of the profiles made by a professional photo laboratory that is capable of manual color balancing—not just by a one-hour photo lab that uses automated machine processing. If necessary, you can contact the Data Quality Specialist (DQS) to arrange for processing in Auburn. Review the prints to ensure that the color of the soil on the print is the color that you want published.



*Bama soil profile, Wilcox County, AL*

In the electronic (Internet and CD) version of the survey, all of the pictures will be in color. Color imagery in electronic format is cheap.

In the published, paper copy of the survey, the cover and the soil profiles will be printed in color and all other pictures will be converted to black and white. Color printing is very expensive.

*How many pictures should I submit?*

*About fifteen plus profiles.*

The published survey can include about one illustration per 25 pages of text. This averages 10 to 15 photos and block diagrams in a normal sized manuscript. If more illustrations are submitted, the DQS or the English editor will reject some. The inclusion of fewer illustrations is acceptable.

Illustrations should clearly relate to a specific sentence in the text and should only be used for subjects that cannot be adequately described using only text. Four or eight soil profiles provides the best balance of cost and coverage for publication; therefore, 8 to 10 profiles should be submitted for review. At least three shots of each profile should be taken, and two should be submitted with the manuscript.

At the discretion of the author, DQS, and editor, extra pictures can be included in a photo gallery in the electronic version of the survey. About 10 to 30 relevant pictures can be included. Pictures for the photo gallery can be prints, slides, or digital images and can be in either color or black and white. They must include a caption (see below). Contact the English editor for details.

### ***What should I include in the caption?***

*The subject of the picture, the correlated name of any soils, and a brief description of the important soil or landscape features that can be seen in the picture.*

Provide a concise caption for all illustrations, including soil profiles and pictures for the photo gallery. Assume that the first words in any caption are “This is a picture of...” See a recently published survey for examples.

The caption should include a description of the subject of the picture, the correlated name of any soil(s) in the picture, and a description of any important soil or landscape features that are visible. It may include a brief statement of important soil qualities that are related to the soil but that are not readily visible in the picture (such as pH). Do not assume that the reader can recognize the subject of the picture by looking at it. e.g. Specify the name of the crop in the caption, don’t assume the readers know corn when they see it.

### ***I really want to use black and white film. Can I?***

*Yes, you can use black and white film if you really want to.*

Call the DQS to make arrangements for processing and enlargement.

We encourage the use of color slide film so that the electronic version will have color, so that you only have to use one kind of film, so that the pictures can be used in other publications, and because less experienced photographers typically get worse results when using black and white film.

### ***Can I use a digital camera?***

*Only if less than 400 copies will be printed; contact the English editor for details.*

At this time (spring 2002), digital photography is acceptable in soil surveys only for short-run printing (400 copies or less) and for electronic products, such as a photo gallery. The printing process used for larger print runs requires higher resolution imagery and better color control than are readily available from digital cameras.

### ***What type of film should I use?***

*Film speed is what you should consider.*

This isn’t about how fast you can take pictures. It’s about how much light you need to get clear images. Film speed indicates sensitivity to light. It’s expressed as the ISO number you see on your film boxes.

A high-speed (fast) film captures light faster than a slow speed film so you don’t need as much light to get a properly exposed image. Since the photos we take for the soil survey manuscript are outdoor shots, a low speed of ISO 64 or ISO 100 works fine.



***How can I save money on pictures?***

*Decide what you need a picture of and then take several shots.*

Film and film processing are relatively inexpensive compared to the cost of your time. Locating a good site for the cover picture and properly preparing sites for soil profiles take time. Therefore, once the hard work has been done, take an adequate number of exposures.

***What makes a good cover photo?***

*Good content.*

The cover photo must be related to soil and should depict an image that is typical or representative of the survey area or that is unique to the survey area.

Appropriate cover photos include landscapes (showing the general relief of the survey area), unique or important land uses, and conservation practices. The cover represents not only the survey area, but the National Cooperative Soil Survey program. The photo should reflect positively on both. Keep in mind that the photo is for the cover of a soil survey, not a tour guide of the survey area. (Although images of local historical monuments have been used on covers in the past, such photos are highly discouraged and may be included on the cover only if the monument is not the central subject of the image.)

The final selection of the cover does not require permission or input from the local conservation district board. Cover options approved by the MO may, as a courtesy, be presented to the local board to identify their preference. These preferences will be honored if the slide has prior approval by the MLRA office.

***How do I take good pictures of soil profiles?***

*Several things are required.*

Carefully prepare the profile face. This includes trimming all roots and ensuring that the prepared face is perpendicular to the angle from which the photo will be taken. You may want to have one side of the pit picked and the other side smooth (in equal proportions).

All photos of profiles should show a measuring tape. The numbers on the tape must be large enough to be clearly legible. The scale should be in inches. The tape should be on the left side of the profile about 3 to 6 inches from the left margin and parallel to the margin. The tape must be straight up-and-down. A crooked tape results in a crooked illustration. The tape should be hung by a nail, twig, etc. Do not use a rock or other item that would appear in the slide. There should be a 6-inch margin above the top of the pit. Use a black photo tape if available. This allows the slide to be used in different surveys and other soil-related publications.

Take a series of slides of each profile. Include photos that show the scale in both inches and centimeters; photos taken from slightly different directions and distance; photos taken with various lighting (flash and natural lighting); and photos in portrait orientation (up-and-down) and in landscape orientation (left-to-right). If the surrounding landscape is appropriate, take slides showing surface configuration, vegetation, land use, etc. Photos that show depth in inches will be used in the published soil survey report (because inches are the unit used in the soil descriptions). Photos with the scale in centimeters may be used in other soil-related publications.

If you have a wide angle lens (24 to 35 mm), a 6 to 8 foot profile is about the maximum exposure for the letters on the tape to be clearly read. If you are using a standard 50 mm lens, a 4 to 6 foot profile is about the maximum exposure. Sidewalls of the pit or road cut should not be seen in the exposure.

Using a flash improves the quality of the slide in low-light conditions and removes shadows cast by overhanging trees. If a polarizing filter is used, be careful not to over-polarize, which creates unnatural colors.

### ***What should I take pictures of?***

#### *Soil and things effected by soil.*

The best pictures catch the readers interest and illustrate something that is difficult to describe in words or that is hard to visualize. A picture of a cow or a picture of a pasture with 0 percent slope typically do not fit in the category of “best pictures.” Especially useful are scenes that illustrate: the relation of the soil to the landscape, the shape of a landform, one or more soil properties, limitations caused by the soil, the effects of management practices, land uses, and soil-related features that are unique to the survey area. Pictures that reflect positively on the survey area are typically preferred over pictures that reflect negatively.

Examples of appropriate subject matter for illustrations include, but are not restricted to the following:

#### **Soil landscapes:**

Uplands, bottomlands, terraces, hills, mountains, swamps, marshes.

General soil map units—relationship between two or more units; topography of a single unit.

Complex map units—ridge and slough; microhighs and microlows; soil-miscellaneous areas.

Consociations—broad flats, depressions, side slopes, complex ridgetops, flood plains, dune areas, beaches.

#### **Soil properties or limitations:**

Depth to rock—road-cut or pit; rock outcrops.

Shrink-swell—surface cracks; slickensides; gilgai; cracks in buildings or streets.

High water table—water seeping from roadcut; ponding on surface; mounded filter field.

Flooding—inundated crops or buildings; structures on pilings or mounds; debris on fences or roads; evidence of scouring or deposition.

Horizonation—strongly contrasting colors; sharply defined boundaries; stratification.

Tilth—surface clods; smooth surface.

Structure—close-up of well-defined structural units.

Wetness—ruts in cropland, pasture, or woodland; stunted or dead plants in crop fields; plants adapted to wet conditions; drainage ditches.

Stoniness—cobbles, stones, or boulders on the surface.

Erosion—gullies; deposition of soil material; exposed roots or footings; gravel on pedestals; and dunes.

Dense layers—roots turned on plowpan or fragipan; protruding fragipan in roadcut.

Instability—slumping of side slopes or roadbanks; broken roads, buildings, or pipe lines; use of pilings

Toxicity—salts on surface; chlorotic or stunted plants.

Droughtiness—drought tolerant plants (cactus, yucca, etc.); stunted plants; rolled-up leaves.

**Land Uses:**

Forest types—loblolly-shortleaf pine, longleaf-slash pine, oak-hickory, oak-gum-cypress.

Woodland management—natural stands, plantations, saw logs, pulp wood.

Operations—harvesting, thinning, planting, site preparation, bedding, subsoiling, prescribed burning, fertilizer application.

Conservation practices—water bars, cross-slope planting, silt fences.

Cropland—common crops or combination of crops; unique crops; tillage practices; terraces; grassed waterways; diversions; contour or cross-slope tillage; residue management; strip-cropping; harvesting or planting operations; drainage; irrigation methods; etc. (Try to show the relationship between the crop or practice to soil properties or limitations. Remember, each illustration is referenced to a statement in the manuscript.)

Hayland and pasture—common plants; well-managed pasture or hayland; cattle or horses grazing; hay or field (windrowed or baled); native pasture.

Wildlife—feed plots or other wildlife plantings; habitat types (wetland, open land, woodland); management practices.

Wetland—depressions, cypress or gum ponds, seep areas, pitcher plant bogs, marshes, artificial.

Urban—Urban encroachment on prime farmland or wetlands; practices to overcome soil limitations (pilings, cut and fill areas, drainage, floating slabs, mounded septic tank filter fields); recreation areas; gardening; land fills.

Other—catfish ponds (aeration, harvesting operations, construction, etc.); farm ponds used for recreation, irrigation, livestock, etc.; orchards; quarries; borrow pits, sand and gravel pits; surface mine reclamation.

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**Notes:**

**DEFINITIONS:**

**Aperture** — Circular opening within a lens that determines the amount of light that is allowed to pass through to reach the film. The amount of light is controlled by setting f-stops.

**Depth of Field** — Zone of acceptably sharp focus extending both in front of and behind the point of true focus. Depth of field varies depending on the aperture selected, the focal length of the lens (or zoom setting), and the focal distance. Depth of field is increased if a smaller aperture is set, if a lens with a shorter focal length is selected, and if the lens is focused at its maximum focal distance.

**Film Speed** — The more sensitive a film is to light, the “faster” it is. The speed of a film is indicated by its ISO (International Standards Organization) number. Each doubling of the ISO number represents a doubling of light sensitivity. Slow films are in the range of ISO 50-100, medium-speed films ISO 200-400, and fast films ISO 800-3200.

**f-number (f-stops)**— Series of numbers engraved on the barrel of a lens representing the different sizes of aperture available. These openings control the amount of light that enters the lens and passes onto the film. F-stops are similar to the pupil of the eye, opening and closing to let in more light. One thing you should remember about f-stops is that they are the opposite size than their f/ number seems to indicate. In other words, the largest number on the lens (f/22 or f/32, for example) is the smallest opening and the smallest number (f/1.4, for example) is the largest opening. You have to use reverse logic or think in terms of fractions—put a 1/ in front of the number, then think 1/22 of a pie is smaller than 1/4 of a pie.

**LCD** — Liquid crystal display. A panel on a digital camera used to compose the photo and to review the photo.

**Pixels** — Pixels are like tiny mosaics that are arranged horizontally and vertically in a precise grid on a digital photograph. The more pixels you have in the grid, the more finely detailed, or sharper, your photo will be.

**Resolution** — The term used to break down a digital photo into pixels. The more pixels you have, the higher the resolution (or the sharpness) of your photo.

**Single lens reflex (SLR)** — Type of camera that uses an angled mirror behind the lens to show exactly the same scene in the viewfinder as encompassed by the lens.

**Through-the-lens metering** — Describes a type of light-measuring system used commonly in reflex cameras to measure the light that is reflected from a subject and then passes through the lens. Commonly abbreviated to **TTL**.



## PHOTO TRACKING SHEET

Date: \_\_\_\_\_

Photo frame #(s): \_\_\_\_\_

County/State: \_\_\_\_\_

Map Unit: \_\_\_\_\_

Soil type(s):

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Significance of the photo:

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Photo(s) by:

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Notes by:

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